Precision Farming Technology Adoption in Cotton Farming: Duration Analysis

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appears on all such copies.
We used survey data collected from cotton producers in eleven U.S. states to address the issues of correlated events and individual heterogeneity in multiple precision technologies adoption. Results from a conditional frailty model indicated that cotton producer adoption of precision technology is significantly influenced by various factors. Further, farm size and farm income have positive influence on the chance of technology adoption by the cotton farmers. Moreover, the model suggested a significant likelihood ratio test implies the presence of the random effect in the model, so we concluded that unobserved heterogeneity exists in the decision of cotton producers to adopt precision technology. Hence, the random effect can be attributed to individual heterogeneity or event dependence or both. The values of random effect for the conditional frailty and shared frailty model are 1.22, 1.12, respectively and are statistically significantly different from zero. Therefore, the results help to formulate an effective policy to increase adoption of precision technologies by cotton producers.